



# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

862.C1854

First Named Inventor or Application Identifier

HIROYUKI FUJIYOSHI

Express Mail Label No.

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

## ADDRESS TO:

Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1. ☐ Fee Transmittal Form  
(Submit an original, and a duplicate for fee processing)

2. ☒ Specification Total Pages **53**

3. ☒ Drawing(s) (35 USC 113) Total Sheets **9**

4. ☒ Oath or Declaration Total Pages **1**

- a. ☐ Newly executed (original or copy)  
b. ☒ Unexecuted for information purposes  
c. ☐ Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 17 completed)  
**[Note Box 5 below]**

i. ☐ **DELETION OF INVENTOR(S)**  
Signed Statement attached deleting inventor(s)  
named in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).

5. ☐ Incorporation By Reference (useable if Box 4c is checked)  
The entire disclosure of the prior application, from which a copy of the  
oath or declaration is supplied under Box 4c, is considered as being  
part of the disclosure of the accompanying application and is hereby  
incorporated by reference therein.

6. ☐ Microfiche Computer Program (Appendix)

7. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)

- a. ☐ Computer Readable Copy  
b. ☐ Paper Copy (identical to computer copy)  
c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))  
9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney  
(when there is an assignee)  
10. ☐ English Translation Document (if applicable)  
11. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations  
12. ☐ Preliminary Amendment  
13. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)  
14. ☐ Small Entity Statement(s) ☐ Statement filed in prior application  
Status still proper and desired  
15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)  
16. ☐ Other: \_\_\_\_\_

17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. \_\_\_\_/\_\_\_\_

## 18. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label

**05514**  
(Insert Customer No. or Attach bar code label here)

or ☐ Correspondence address below

NAME

Address

City

Country

State

Telephone

Zip Code

Fax

+

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c))	94-20 =	74	X \$ 18.00 =	\$1,332.00
	INDEPENDENT CLAIMS (37 CFR 1.16(b))	8-3 =	5	X \$ 78.00 =	\$ 390.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			\$260.00 =	\$ 0.00
				BASIC FEE (37 CFR 1.16(a))	\$ 690.00
	Total of above Calculations =				\$2,412.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).				
	TOTAL =				\$2,412.00

19. Small entity status

- a. ☐ A Small entity statement is enclosed
- b. ☐ A small entity statement was filed in the prior nonprovisional application and such status is still proper and desired.
- c. ☐ Is no longer claimed.

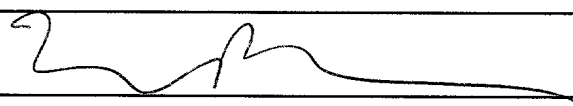
20. ☒ A check in the amount of \$ 2,412.00 to cover the filing fee is enclosed.

21. ☐ A check in the amount of \$ \_\_\_\_\_ to cover the recordal fee is enclosed.

22. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 06-1205:

- a. ☒ Fees required under 37 CFR 1.16.
- b. ☒ Fees required under 37 CFR 1.17.
- c. ☐ Fees required under 37 CFR 1.18.

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

NAME	Leonard P. Diana (Reg. No. 29,296)
SIGNATURE	
DATE	February 29, 2000

## TITLE OF THE INVENTION

INFORMATION PROCESSING APPARATUS, SYSTEM AND METHOD

5

## FIELD OF THE INVENTION

10 This invention relates to an information processing apparatus, method and system for transmitting document information within a document management system by electronic mail.

## BACKGROUND OF THE INVENTION

15 In general, when document information in a document management system is transmitted by an electronic mail application, the document information itself or the result of expanding the document into an image having a certain format is transmitted.

20 However, if the amount of data of the document perse that is to be transmitted is large, a great load is placed upon the electronic mail system. Regarding an image document stored in the document management system, it is possible to add additional information such as annotation information and user's own property  
25 information to expanded data. However, when an actual document is attached to an electronic mail, it is not

easy to display an actual document and its additional  
information with explicit indication of the relationship  
between them. If the actual document can be referred in  
the format or state in which it was stored in the  
5 document management system, the above problem will be  
solved. However, in order to perform the above  
operation, it is necessary to ascertain the storage  
location of the document through a different method and  
the procedure involved is troublesome.

10 Furthermore, in a case where the document is  
referred to in the format in which it was stored in the  
document management system, there are instances where  
user registration is necessary in order to access the  
system in which the document exists. The result is poor  
15 operability.

#### SUMMARY OF THE INVENTION -

Accordingly, an object of the present invention is  
20 to make it possible to transmit specific information  
such as the storage location of a document (object) and  
access privilege without transmitting the actual  
substance of the object or a file in which the content  
of the object has been converted to an image, thereby  
25 making it possible to display the document easily on the  
receiving side without increasing the load upon the

electronic mail system.

Another object of the present invention is to make it possible to transmit the storage location of a document as the main body of electronic mail so that the document can be displayed easily on the receiving side.

Another object of the present invention is to make it possible for a receiving party to gain temporary access to a document without requiring that the receiving party register as a user with the system in which the document has been stored.

A further object of the present invention is to make it possible for the transmitting side to limit the version of documents accessed by a receiving party, whereby diverse access control can be realized with facility.

A further object of the present invention is to make it possible for a receiving party to access a document within a folder the same as that containing a document specified by the transmitting party, whereby  
20 diverse access control can be realized with facility.

According to the present invention, the foregoing objects are attained by providing an information processing apparatus capable of transmitting electronic mail, comprising: designating means for designating a  
25 desired object to be attached to electronic mail;  
acquisition means for acquiring access information

relating to the object designated by the designating means; and generating means for generating electronic mail information which includes the access information acquired by the acquisition means.

5           According to another aspect of the present invention, the foregoing objects are attained by providing an information processing apparatus capable of receiving electronic mail, comprising: extraction means for extracting access information contained in  
10   electronic mail that has been received; access means for accessing an object based upon the access information extracted by the extraction means; and display means for presenting a display that corresponds to the object based upon content of the object accessed by the access  
15   means.

          According to the present invention, the foregoing objects are attained by providing an information processing system in which electronic mail can be transmitted and received between information processing  
20   apparatus, comprising: generating means for generating electronic mail which includes access information relating to an object to be attached to electronic mail; communication means for sending and receiving the electronic mail generated by the generating means; and  
25   access means for accessing the object based upon the access information contained in the electronic mail

received via the communication means.

Other features and advantages of the present invention will be apparent from the following description taken in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the figures thereof.

#### BRIEF DESCRIPTION OF THE DRAWINGS

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The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

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Fig. 1 is a system block diagram illustrating the configuration of an information processing system to which there is applied a scheme for giving notification of document storage information according to an embodiment of the present invention;

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Fig. 2 is a block diagram showing the details of construction of a PC and database server in the information processing system which applies the scheme for giving notification of document storage information according to this embodiment;

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Fig. 3 is a diagram showing an overview of a main





A preferred embodiment of the present invention will now be described in detail in accordance with the accompanying drawings.

Fig. 1 is a system block diagram illustrating the configuration of an information processing system to which there is applied a scheme for giving notification of document storage information according to an embodiment of the present invention. The information processing system comprises at least two computers (PC-A 201 and PC-B 202), a database server 203 and an electronic mail server 204. The computers 201 and 202, which function as mail clients, can be ordinary personal computers or workstations. In this embodiment the database server 203 stores documents and the like to be transmitted by electronic mail. The electronic mail server 204 stores and distributes electronic mail that has been transmitted in the system. The computers 201, 202, database server 203 and main server 204 are connected by a network 205.

Fig. 2 is a block diagram showing the details of construction of a personal computer and database server in the information processing system which applies the scheme for giving notification of document storage information according to this embodiment. As shown in Fig. 2, a personal computer (PC) 300 corresponds to the personal computer 201 or 202 in Fig. 1. The PC 300

includes a display unit 301, an input unit 302, a central processing unit 303, an external storage device 304, a memory 305 and a network interface 306. A database server 310 corresponds to the database server 203 in Fig. 1 and includes a network interface 311, a central processing unit 312, a memory 313 and an external storage device 314. The network interfaces 306 and 311 are connected by a network cable.

The display unit 301 in the PC 300 has a CRT or LCD and presents various displays under the control of the central processing unit 303. The input unit 302 includes a keyboard and a pointing device, for example, and is for making various inputs to the central processing unit 303. The central processing unit 303 implements various processing, described later, by executing a control program that has been stored in the memory 305. The external storage device 304 is a large-capacity non-volatile memory typified by a hard disk or the like. The memory 305, which is constituted by a RAM or the like, provides a working area for the central processing unit 303. The network interface 306 is for making a connection to the Internet by a modem, etc., via a telephone line.

The network interface 311 in the database server 310 is for making a connection to the Internet, by way of example. The central processing unit 312 implements

various processing, described later, by executing a control program that has been stored in the memory 313. The external storage device 314 is a large-capacity non-volatile memory typified by a hard disk or the like.

5        Fig. 3 is a diagram showing an overview of a main window for displaying an at-a-glance view of objects in a document management system or image management system which applies a scheme for giving notification of document storage information according to this  
10        embodiment.

Fig. 3 shows a main window 400. In Fig. 3, objects in a storage area  $\alpha$  are displayed in a thumbnail format. In this example, there are two objects, namely A and B. It should be noted that the storage area  $\alpha$  corresponds  
15        to, e.g., a directory or folder. Buttons 401 are for selecting whether the format of the display presented in an at-a-glance display area 403 is the thumbnail format or a list format. Buttons 402 are for changing the storage area to be displayed in the at-a-glance view.  
20        The at-a-glance display area 403 displays objects. More specifically, this is an area in which objects in the storage area selected by the buttons 402 are displayed in an at-a-glance view in a format (thumbnail or list) selected by the buttons 401. Fig. 3 illustrates a state  
25        in which a thumbnail display has been selected. An icon 404 corresponds to an electronic mail application. An

object displayed as a thumbnail image or an icon  
displayed in a list in the at-a-glance display area 403  
may be dragged and dropped on the icon 404 of the  
electronic mail application, thereby making it possible  
5 to transmit electronic mail to which information  
relating to this object has been attached.

It should be noted that an object that has been  
dragged and dropped on the icon 404 of the electronic  
mail application has version information. In a case  
10 where the transmitting party has not allowed the  
receiving side to access all versions, only an object  
having the version information can be accessed. This  
will become clear from a description rendered later.

Fig. 4 is a diagram illustrating an access-key  
15 configuration screen 500 displayed when one object  
displayed in at-a-glance form in Fig. 3 has been dropped  
on the icon 404 of the electronic mail application.  
This screen enables the setting of information necessary  
to access the object and to store the information as an  
20 access key. The object shall be referred to as a  
document below. Moreover, in this specification, it  
will be assumed that the document includes a text file,  
an image file, etc.

The access-key configuration screen 500 shown in  
25 Fig. 4 includes a user name 501 that makes it possible  
to access this system (e.g., a database server in which



with regard to all documents.

Area 504: Sets whether or not a period of validity is to be set for the access key that has been created.

Area 505: Sets the period of validity.

5 If an OK button 506 is pressed (clicked) after the above-mentioned items have been set, an access-key file is created using the configured content being displayed on the access-key configuration screen 500 and the file is attached to an electronic mail file. If a cancel  
10 button 507 is clicked, then processing is suspended without the creation of access-key file.

Fig. 5 is a diagram illustrating an access-key format 510 prior to encryption of an access-key file generated based upon content configured by the access-  
15 key configuration screen shown in Fig. 4. Numeral 510 in Fig. 5 denotes the access-key format prior to encryption. Since the access key usually is encrypted, it cannot be referred to or edited directly by a text editor.

20 In Fig. 5, "ABSOLUTE STORAGE LOCATION OF DOCUMENT" is where the absolute storage location of a dropped document in the database system is set. "USER NAME" is either "ACCESS-KEY USER" or "NONE" entered in the area of user name 501. "PASSWORD" is where a password  
25 established by the database system is set only in a case where an access-key user has been set. "ACCESS



Fig. 6B illustrates the window of an electronic mail application. A main window 610 of the electronic mail application indicates an overview of a main window displayed by the electronic mail application. As in the manner of a window of an ordinary electronic mail application, the window 610 is divided into a mail header area 611 which displays a mail header, a mail body area 612 which displays the body of mail, and an attachment data area 613 which indicates attachment data. An icon 614 corresponds to an access-key file generated through the above-described procedure and attached to this electronic mail.

If the icon 614 corresponding to the access-key file that has been attached to the received mail is dragged and dropped on the thumbnail image display area 601, the database is accessed based upon the information that has been saved in this access-key file. It is assumed here that the access-key file of icon 614 has been generated on the side of the transmitting party of this electronic mail by dropping document A in storage area  $\alpha$  of the personal computer on the transmitting side onto the icon 404 of the electronic mail application in the manner shown in Fig. 3. In this case the window display of the personal computer on the receiving side changes from the content shown in Fig. 6A to the content shown in Fig. 6C. Here, it is assumed that documents A



and B exist in the storage area  $\alpha$  in the personal computer on the transmitting side and the "SAME-FOLDER ALL-DOCUMENT DISPLAY FRAG" has been turned on. Accordingly, document A, for which an attachment in the storage area  $\alpha$  (of the personal computer on the side transmitting the electronic mail) has been specified, and document B, which is contained in the same folder, are being displayed in the main window indicated at 620 in Fig. 6C.

It should be noted that the electronic mail system and electronic mail application being employed in this system are a well-known system and application.

Processing according to this embodiment will be described next.

Fig. 7 is a flowchart useful in describing processing for transmitting an access key according to this embodiment. The flowchart of Fig. 7 will be referred to in order to describe processing executed by the central processing unit 303 of this system for creating an access-key file and for attaching the created access-key file to electronic mail in a case where a document is dropped onto the icon of the electronic mail application. It will be assumed in this embodiment that the user of the personal computer 201 attaches document information in the database server 203 to electronic mail and sends this electronic mail to the

user of the personal computer 202, that the electronic mail in such case is accumulated in the electronic mail server 204 and that the electronic mail server 204 notifies the personal computer 202 of the fact the electronic mail arrived. Alternatively, it will be assumed that the electronic mail is sent from the electronic mail server 204 to the user of the personal computer 202

First, at step S101 in Fig. 7, the absolute storage location of a document (document A in storage area  $\alpha$  in this example) specified by the operation illustrated in Fig. 3 is acquired through the central processing unit 312 of the database server 310 via the network interfaces 306 and 311. Next, at step S102, the privilege to access this document is acquired at step S102 in a manner similar to that of step S101. Then, at step S103, the privilege to access the folder containing this document is acquired through a similar procedure.

This is followed by step S104, at which the access-key configuration screen 500 is displayed to allow the user to enter the conditions for creation of the access key. It should be noted that the access privilege 502 is restricted so as not to be less stringent than the conditions acquired at step S102. For example, if the document access privilege acquired at step S102 is only "READ", then "READ/WRITE" in access privilege area 502

is dimmed beforehand to make the selection thereof impossible. Similarly, if the folder access privilege acquired at step S103 is "DISPLAY APPLICABLE DOCUMENT ONLY", then the check box of area 503 is dimmed

5 beforehand to make selection thereof impossible.

Next, at step S104a, the ID of the selected document is acquired in a format that includes the version. Furthermore, if the "SAME-FOLDER ALL-DOCUMENT DISPLAY FLAG" is ON, then the IDs of all documents  
10 present in the same folder are acquired in a format that includes the versions.

This is followed by step S105, at which it is determined whether "ACCESS-KEY USER" has been specified as the user name in area 501 of Fig. 4. If the decision  
15 is "NO", then control proceeds to step S107. If, on the other hand, it is found at step S105 that "ACCESS-KEY USER" has been specified as the user name, control proceeds to step S106. Here the password of "ACCESS-KEY USER" is acquired through the central processing unit  
20 312 of database server 310.

An access-key file of the kind shown in Fig. 5 is created at step S107 based upon the information obtained above and the file is subjected to compression processing. The compressed access-key file is attached  
25 to the electronic mail application at step S108 and the electronic mail is transmitted at step S109. It should

be noted that the operation at step S109 may be executed on the side of the electronic mail application.

Thus, an access-key file corresponding to a desired document is transmitted by electronic mail.

5 Described next with reference to Figs. 8A and 8B will be document display processing executed by the central processing unit 303 of this system in a case where the icon 614 corresponding to the access-key file has been dropped on the at-a-glance display area 601  
10 from the attachment data area 613 of the electronic mail application at the apparatus on the side that receives the electronic mail. Figs. 8A and 8B are flowcharts illustrating document display processing based upon the access key. In this example, the processing described  
15 is that executed when electronic mail that has been attached by the user of the personal computer 201 is stored in the electronic mail server 204, the electronic mail server 204 notifies the user of the personal computer 202 that there is incoming electronic mail, the  
20 user of the personal computer 202 opens this electronic mail and displays the document in accordance with the access key.

The compressed access-key file corresponding to the icon 614 is uncompressed, the access content (access  
25 information) that has been saved in this file is acquired and the content is stored in memory 305 at step

This is followed by step S705, at which log-in to the database is performed based upon the content that has been saved in the access key and the content that has been entered at step S704. In a case where the user name 501 has been set, log-in to the database is performed based upon the user name and password contained in the access-key format 510 (Fig. 5). Next, it is determined at step S706 whether log-in succeeded. If log-in failed, an error message is displayed at step S710 and processing is terminated. If it is determined at step S706 that log-in succeeded, the specified

document is read in at step S707 in accordance with the  
access content. It is then determined at step S708  
whether read-in succeeded. If it is determined that  
read-in failed, control proceeds to step S709a. In this  
5 case, an applicable document does not exist and  
therefore a display is presented to the effect that the  
document cannot be accessed. Control thenceforth  
proceeds to step S711 so that processing relating to  
display of other documents in this folder may be  
10 executed.

If it is determined at step S708 that read-in  
succeeded, then control proceeds to step S708a, at which  
it is determined whether the all-version flag is ON or  
not. If the all-version flag is ON, i.e., if a version  
15 check will not be carried out, control proceeds directly  
to step S709. On the other hand, if the all-version  
flag is OFF, i.e., if a version check will be carried  
out, control proceeds to step S708b. Here it is  
determined whether the version information of the ID  
20 that has been stored in the access key matches the  
version information of the applicable document. If it  
is determined that a match has been achieved, control  
proceeds to step S709. Here a display relating to the  
applicable document is presented and control proceeds to  
25 step S711. In regard to step S709, if the method of  
presenting the display in the main window is in

accordance with the thumbnail format, a thumbnail image of the document is displayed in the at-a-glance display area 601. If the method of presenting the display in the main window is in accordance with the list format, the content of a list is displayed in the at-a-glance display area 601. The thumbnail image (or item in the list) corresponding to the applicable document is displayed in such a manner that it can be distinguished as being the specified document. In this example, it is assumed that the applicable thumbnail image enclosed by a red border.

If it is determined at step S708b that the two items of version information do not match, control proceeds to step S709a, at which a display to the effect that the document cannot be displayed is presented. Control then proceeds to step S711. In order to indicate at step S709a that the applicable document could not be accessed, the thumbnail image is displayed in black in the thumbnail mode and an indication to the effect that the document is inaccessible is displayed in the case of the list display.

It is determined at step S711 whether "DISPLAY ALL DOCUMENTS CONTAINED IN SAME FOLDER" has been set in the access content. If it has not been set, processing is  
25 terminated. If it is determined at step S711 that "DISPLAY ALL DOCUMENTS CONTAINED IN SAME FOLDER" has

5 It is determined at step S713 whether read-in succeeded  
and, if failure is the decision, then control proceeds  
to step S714a. This means that the document has been  
deleted. If the decision rendered at step S713 is that  
read-in succeeded, then it is determined at step S713a  
10 whether the all-version flag is ON or not. If the all-  
version flag is ON, i.e., if a version check will not be  
carried out, control proceeds directly to step S714. On  
the other hand, if the all-version flag is found to be  
OFF at step S713a, i.e., if a version check will be  
15 carried out, control proceeds to step S713b. Here it is  
determined whether the version information of the ID  
that has been stored in the access key matches. Control  
proceeds to step S714a if a match is not achieved.

The document is displayed at step S714 in accordance with the display format. In order to indicate at step S714a that the applicable document could not be accessed, the thumbnail image is displayed in black in the thumbnail mode and an indication to the effect that the document is inaccessible is displayed in the case of the list display. This is followed by step S715, at which it is determined whether all documents in



the same folder have been read in, while taking into consideration also the document ID value at the same storage location as that of the applicable document in the access key. Processing is terminated if it is  
5 determined that all documents have been read in. If it is determined at step S715 that all documents have not been read in, processing from step S712 onward is repeated.

In the case of the thumbnail display mode in the  
10 processing described above, a folder ("α" in Fig. 6C) separate from the folder currently created as shown in Fig. 6C can be created and displayed inside, thereby making it possible to display the folder separately of the area currently open.

By virtue of the foregoing processing, icons or  
15 list items of a plurality of documents are displayed in a case where "DISPLAY ALL DOCUMENTS CONTAINED IN SAME FOLDER" has been specified. However, since the icon or list item of a specified document is enclosed by a red  
20 border, as mentioned earlier, the user can distinguish this document at a glance.

In accordance with the above embodiment, as described above, only information such as the storage location of a document or the access privilege can be  
25 transmitted as an access key by electronic mail to another person without transmitting the actual document

or a file that has been converted to an image, whereby it becomes possible to display, in a simple manner, the stored document based upon the access key that has been received.

5           Further, only the storage location (text data) of a document can be transmitted as the main body of electronic mail to another person, and the stored document can be acquired and displayed in a simple manner based upon the storage location that has been  
10 received.

          Furthermore, even if a person is not registered as a user with a database in which a document has been stored, it is possible to access the document through an access-key user that has been assigned to an access key.

15           The foregoing embodiment describes an operation performed in a thumbnail display area. However, if a similar operation is performed in a list display area, similar results will be displayed based upon the list display.

20           Further, it is possible to obtain a set-up in which only the same version of a document identical with a document designated by the transmitting party can be accessed [this is a case where the "APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE (508) FLAG" is OFF and,  
25 moreover, the "SAME-FOLDER ALL-DOCUMENT DISPLAY (503) FLAG" is ON].

Further, it is possible to obtain a set-up in which any version only of a document identical with a document designated by the transmitting party can be accessed [this is a case where the "APPLICABLE-DOCUMENT ALL-  
5 VERSION ACCESS ENABLE (508) FLAG" is ON and, moreover, the "SAME-FOLDER ALL-DOCUMENT DISPLAY (503) FLAG" is OFF].

Further, it is possible to obtain a set-up that allows access only to all documents of the same version,  
10 which exist when the transmitting party specifies a document, in a folder that same as that of the document when the transmitting party specifies the document. In other words, it is possible to construct an environment identical with that of the document being accessed by  
15 the transmitting party [this is a case where the "APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE (508) FLAG" is OFF and, moreover, the "SAME-FOLDER ALL-DOCUMENT DISPLAY (503) FLAG" is ON].

Further, it is possible to obtain a set-up in which  
20 all documents of all versions that exist in a folder the same as that of the document specified by the transmitting party is accessed [this is a case where the "APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE (508) FLAG" is ON and, moreover, the "SAME-FOLDER ALL-DOCUMENT  
25 DISPLAY (503) FLAG" is ON].

According to the embodiment, it is assumed that the

side storing the documents retains all versions.

However, the present invention is applicable also in a case where, when update processing has been applied to documents, only the latest documents remain. This

5 merely represents a state in which only the latest versions of documents are available.

It goes without saying that the object of the invention is attained by supplying a storage medium storing the program codes of the software for performing  
10 the functions of the foregoing embodiment to a system or an apparatus, reading the program codes with a computer (e.g., a CPU or MPU) of the system or apparatus from the storage medium, and then executing the program codes.

In this case, the program codes read from the  
15 storage medium implement the functions of the embodiment, and the storage medium storing the program codes constitutes the invention. By reading the program into the system or apparatus from the storage medium, the system or apparatus will operate in accordance with  
20 a predetermined method.

Further, the storage medium for supplying the program code can employ a floppy disk, hard disk, optical disk, magneto-optical disk, CD-ROM, CD-R, magnetic tape, non-volatile type memory card or ROM.

25 Furthermore, besides the case where the aforesaid functions according to the embodiments are implemented

by executing the program codes read by a computer, it goes without saying that the present invention covers a case where an operating system or the like running on the computer performs a part of or the entire process in accordance with the designation of program codes and implements the functions according to the embodiments.

It goes without saying that the present invention further covers a case where, after the program codes read from the storage medium are written in a function expansion board inserted into the computer or in a memory provided in a function expansion unit connected to the computer, a CPU or the like contained in the function expansion board or function expansion unit performs a part of or the entire process in accordance with the designation of program codes and implements the function of the above embodiment.

In a case where the present invention is applied to the storage medium, program code corresponding to the flowcharts described earlier in Figs. 7, 8A and 8B is stored on this storage medium.

Thus, in accordance with the present invention, as described above, it is possible to transmit access information such as the storage location and access privilege of a document without transmitting the actual document or a file in which the document has been converted to an image as the access-key file by using

the electronic mail, thereby making it possible to display the document easily on the receiving side without increasing the load upon the electronic mail system.

5 Further, in accordance with the present invention, it is possible to transmit the storage location of a document as the main body of electronic mail so that the document can be displayed easily on the receiving side.

10 Further, in accordance with the present invention, it is possible for a receiving party to gain temporary access to a document without requiring that the receiving party register as a user with the system in which the document has been stored.

15 Further, in accordance with the present invention, it is possible for the transmitting side to limit the version of documents accessed by a receiving party.

20 Further, in accordance with the present invention, it is possible for a receiving party to access a document within a folder the same as that containing a document specified by the transmitting party.

As many apparently widely different embodiments of the present invention can be made without departing from the spirit and scope thereof, it is to be understood that the invention is not limited to the specific  
25 embodiments thereof except as defined in the appended claims.

WHAT IS CLAIMED IS:

1. An information processing apparatus capable of transmitting electronic mail, comprising:

designating means for designating a desired object  
5 to be attached to electronic mail;

acquisition means for acquiring access information relating to the object designated by said designating means; and

generating means for generating electronic mail  
10 information which includes the access information acquired by said acquisition means.

2. The apparatus according to claim 1, wherein said generating means generates an attachment file which includes the access information acquired by said  
15 acquisition means and attaches the generated attachment file to electronic mail that is to be transmitted.

3. The apparatus according to claim 1, wherein said generating means affixes the access information, which has been acquired by said acquisition means, to the main  
20 body of electronic mail that is to be transmitted.

4. The apparatus according to claim 1, wherein the access information includes information indicating storage location of the object, which has been designated by said designating means, in a system.

25 5. The apparatus according to claim 1, wherein said designating means has display means for presenting an

at-a-glance display, in a thumbnail or list format, of documents that are present in a specific storage area, and for displaying an icon corresponding to an electronic mail application that is for generating and  
5 transmitting electronic mail;

wherein a desired document among the documents in the at-a-glance display is dropped onto said icon, thereby designating the desired document.

6. The apparatus according to claim 1, wherein said  
10 acquisition means has setting means for allowing a user to set access information via a prescribed user interface.

7. The apparatus according to claim 1, wherein said acquisition means sets an access key, which is for  
15 enabling access to the object, as part of the access information.

8. The apparatus according to claim 1, further comprising setting means for setting, as part of the access information, permission to access all object  
20 files in a storage area of an object that has been designated by said designating means.

9. The apparatus according to claim 1, further comprising setting means for setting, as part of the access information, permission to access other versions  
25 of an object that has been designated by said designating means.



10. An information processing apparatus capable of receiving electronic mail, comprising:

extraction means for extracting access information contained in electronic mail that has been received;

5 access means for accessing an object based upon the access information extracted by said extraction means; and

display means for presenting a display that corresponds to the object based upon content of the  
10 object accessed by said access means.

11. The apparatus according to claim 10, wherein said display means presents either a thumbnail display or a list display regarding objects accessed by said access means.

15 12. The apparatus according to claim 10, wherein the access information contains enabling information indicating whether it is permissible to access another object present at a storage location to which said object belongs;

20 said access means accesses another object present at said storage location in a case where the enabling information permits access to the other object; and

said display means presents an at-a-glance display relating to an object present at said storage location  
25 based upon results of accessing performed by said access means.

13. The apparatus according to claim 12, further comprising:

selection means for selecting a desired object from the at-a-glance display; and

5 content display means for displaying content of an object that has been selected by said selection means.

14. The apparatus according to claim 10, wherein the access information contains enabling information indicating whether it is permissible to access another  
10 version of said object;

said access means accesses an object which is another version of said object in a case where the enabling information permits access to the other version; and

15 said display means presents an at-a-glance display inclusive of the other version of said object based upon results of accessing performed by said access means.

15. The apparatus according to claim 14, further comprising:

20 selection means for selecting a desired object from the at-a-glance display; and

content display means for displaying content of an object that has been selected by said selection means.

16. The apparatus according to claim 10, wherein said  
25 extraction means extracts the access information from a file that has been attached to electronic mail.

17. The apparatus according to claim 10, wherein said extraction means extracts the access information from the main body of electronic mail.

18. The apparatus according to claim 10, wherein the  
5 access information includes position information for specifying a storage location at which said object is present, and an access key for obtaining privilege to access an object at said storage location; and

using the access key, said access means accesses  
10 said object at the storage location specified by the position information

19. The apparatus according to claim 18, wherein the access key is information for logging in to said storage location.

15 20. An information processing system in which electronic mail can be sent and received between information processing apparatus, comprising:

generating means for generating electronic mail  
information which includes access information relating  
20 to an object to be attached to electronic mail;

communication means for sending and receiving the electronic mail information generated by said generating means; and

access means for accessing the object based upon  
25 the access information contained in the electronic mail information received via said communication means.

21. The system according to claim 20, wherein said generating means includes:

designating means for designating a desired object to be attached to electronic mail;

5 acquisition means for acquiring access information relating to the object designated by said designating means; and

mail information generating means for generating electronic mail information in which the access  
10 information acquired by said acquisition means constitutes part of the electronic mail.

22. The system according to claim 21, wherein said mail information generating means generates an attachment file which includes the access information acquired by  
15 said acquisition means and attaches the generated attachment file to electronic mail that is to be transmitted.

23. The system according to claim 21, wherein said mail information generating means affixes the access  
20 information, which has been acquired by said acquisition means, to the main body of electronic mail that is to be transmitted.

24. The system according to claim 21, wherein the access information includes information indicating  
25 storage location of the object, which has been designated by said designating means, in the system.

25. The system according to claim 21, wherein said designating means has display means for presenting an at-a-glance display, in a thumbnail or list format, of documents that are present in a specific storage area,  
5 and for displaying an icon corresponding to an electronic mail application that is for generating and transmitting electronic mail;

wherein a desired document among the documents in the at-a-glance display is dropped onto said icon,  
10 thereby designating the desired document.

26. The system according to claim 21, wherein said acquisition means has setting means for allowing a user to set access information via a prescribed user interface.

15 27. The system according to claim 21, wherein said acquisition means sets an access key, which is for enabling access to the object, as part of the access information.

28. The system according to claim 21, further  
20 comprising setting means for setting, as part of the access information, permission to access all object files in a storage area of an object that has been designated by said designating means.

29. The system according to claim 21, further  
25 comprising setting means for setting, as part of the access information, permission to access other versions

of an object that has been designated by said designating means.

30. The system according to claim 20, wherein said communication means transmits the electronic mail

5 information, which has been generated by said generating means, to an information processing apparatus that has been designated.

31. The system according to claim 20, wherein said access means includes:

10 extraction means for extracting the access information contained in electronic mail that has been received;

object access means for accessing an object based upon the access information extracted by said extraction  
15 means; and

display means for presenting a display that corresponds to the object based upon content of the object accessed by said access means.

32. The system according to claim 31, wherein said  
20 display means presents either a thumbnail display or a list display regarding objects accessed by said access means.

33. The system according to claim 31, wherein the access information contains enabling information  
25 indicating whether it is permissible to access another object present at a storage location to which said

object belongs;

said access means accesses another object present at said storage location in a case where the enabling information permits access to the other object; and

5        said display means presents an at-a-glance display relating to an object present at said storage location based upon results of accessing performed by said access means.

34. The system according to claim 33, further  
10        comprising:

         selection means for selecting a desired object from the at-a-glance display; and

         content display means for displaying content of an object that has been selected by said selection means.

15        35. The system according to claim 31, wherein the access information contains enabling information indicating whether it is permissible to access another version of said object;

         said access means accesses an object which is  
20        another version of said object in a case where the enabling information permits access to the other version; and

         said display means presents an at-a-glance display inclusive of the other version of said object based upon  
25        results of accessing performed by said access means.

36. The system according to claim 35, further

comprising:

selection means for selecting a desired object from the at-a-glance display; and

content display means for displaying content of an  
5 object that has been selected by said selection means.

37. The system according to claim 31, wherein said extraction means extracts the access information from a file that has been attached to electronic mail.

38. The system according to claim 31, wherein said  
10 extraction means extracts the access information from the main body of electronic mail.

39. The system according to claim 31, wherein the access information includes position information for specifying a storage location at which said object is  
15 present, and an access key for obtaining privilege to access an object at said storage location; and

using the access key, said object access means accesses said object at the storage location specified by the position information

20 40. The system according to claim 39, wherein the access key is information for logging in to said storage location.

41. An information processing method in an apparatus capable of transmitting electronic mail, said method  
25 comprising:

a designating step of designating a desired object



to be attached to electronic mail;

an acquisition step of acquiring access information relating to the object designated at said designating step; and

5 a generating step of generating electronic mail information which includes the access information acquired at said acquisition step.

42. The method according to claim 41, wherein said  
10 generating step generates an attachment file which includes the access information acquired at said acquisition step and attaches the generated attachment file to electronic mail that is to be transmitted.

43. The method according to claim 41, wherein said  
15 generating step affixes the access information, which has been acquired at said acquisition step, to the main body of electronic mail that is to be transmitted.

44. The method according to claim 41, wherein the  
20 access information includes information indicating storage location of the object, which has been designated at said designating step, in a system.

45. The method according to claim 41, wherein said  
designating step includes a display step of presenting  
an at-a-glance display, in a thumbnail or list format,  
of documents that are present in a specific storage  
25 area, and of displaying an icon corresponding to an electronic mail application that is for generating and

transmitting electronic mail;

wherein a desired document among the documents in the at-a-glance display is dropped onto said icon, thereby designating the desired document.

5 46. The method according to claim 41, wherein said acquisition step includes a setting step of allowing a user to set access information via a prescribed user interface.

47. The method according to claim 41, wherein said  
10 acquisition step sets an access key, which is for enabling access to the object, as part of the access information.

48. The method according to claim 41, further comprising a setting step of setting, as part of the  
15 access information, permission to access all object files in a storage area of an object that has been designated at said designating step.

49. The method according to claim 41, further comprising a setting step of setting, as part of the  
20 access information, permission to access other versions of an object that has been designated at said designating step.

50. An information processing method in an apparatus capable of receiving electronic mail, said method  
25 comprising:

an extraction step of extracting access information

contained in electronic mail that has been received;

an access step of accessing an object based upon the access information extracted at said extraction step; and

5 a display step of presenting a display that corresponds to the object based upon content of the object accessed at said access step.

51. The method according to claim 50, wherein said display step presents either a thumbnail display or a  
10 list display regarding objects accessed at said access step.

52. The method according to claim 50, wherein the access information contains enabling information indicating whether it is permissible to access another  
15 object present at a storage location to which said object belongs;

said access step accesses another object present at said storage location in a case where the enabling information permits access to the other object; and

20 said display step presents an at-a-glance display relating to an object present at said storage location based upon results of accessing performed at said access step.

53. The method according to claim 52, further  
25 comprising:

a selection step of selecting a desired object from

the at-a-glance display; and

a content display step of displaying content of an object that has been selected at said selection step.

54. The method according to claim 50, wherein the  
5 access information contains enabling information indicating whether it is permissible to access another version of said object;

said access step accesses an object which is another version of said object in a case where the  
10 enabling information permits access to the other version; and

said display step presents an at-a-glance display inclusive of the other version of said object based upon results of accessing performed at said access step.

15 55. The method according to claim 54, further comprising:

a selection step of selecting a desired object from the at-a-glance display; and

a content display step of displaying content of an  
20 object that has been selected at said selection step.

56. The method according to claim 50, wherein said extraction step extracts the access information from a file that has been attached to electronic mail.

57. The method according to claim 50, wherein said  
25 extraction step extracts the access information from the main body of electronic mail.

58. The method according to claim 50, wherein the access information includes position information for specifying a storage location at which said object is present, and an access key for obtaining privilege to  
5 access an object at said storage location; and

using the access key, said access step accesses said object at the storage location specified by the position information

59. The method according to claim 58, wherein the  
10 access key is information for logging in to said storage location.

60. A method of controlling an information processing system in which electronic mail can be sent and received between information processing apparatus, said method  
15 comprising:

a generating step of generating electronic mail information which includes access information relating to an object to be attached to electronic mail;

a communication step of sending and receiving the  
20 electronic mail information generated at said generating step; and

an access step of accessing the object based upon the access information contained in the electronic mail information received via said communication step.

61. The method according to claim 60, wherein said  
25 generating step includes:

a designating step of designating a desired object to be attached to electronic mail;

an acquisition step of acquiring access information relating to the object designated at said designating

5 step; and

mail information generating step of generating electronic mail information in which the access information acquired at said acquisition step constitutes part of the electronic mail.

10 62. The method according to claim 61, wherein said mail information generating step generates an attachment file which includes the access information acquired by said acquisition step and attaches the generated attachment file to electronic mail that is to be transmitted.

15 63. The method according to claim 61, wherein said mail information generating step affixes the access information, which has been acquired at said acquisition step, to the main body of electronic mail that is to be transmitted.

20 64. The method according to claim 61, wherein the access information includes information indicating storage location of the object, which has been designated at said designating step, in the system.

65. The method according to claim 61, wherein said  
25 designating step includes a display step of presenting an at-a-glance display, in a thumbnail or list format,

of documents that are present in a specific storage area, and of displaying an icon corresponding to an electronic mail application that is for generating and transmitting electronic mail;

5            wherein a desired document among the documents in the at-a-glance display is dropped onto said icon, thereby designating the desired document.

66. The method according to claim 61, wherein said acquisition step includes a setting step of allowing a  
10       user to set access information via a prescribed user interface.

67. The method according to claim 61, wherein said acquisition step sets an access key, which is for enabling access to the object, as part of the access  
15       information.

68. The method according to claim 61, further comprising a setting step of setting, as part of the access information, permission to access all object files in a storage area of an object that has been  
20       designated at said designating step.

69. The method according to claim 61, further comprising a setting step of setting, as part of the access information, permission to access other versions of an object that has been designated at said  
25       designating step.

70. The method according to claim 60, wherein said

communication step transmits the electronic mail information, which has been generated at said generating step, to an information processing apparatus that has been designated.

5 71. The method according to claim 60, wherein said access step includes:

an extraction step of extracting the access information contained in electronic mail that has been received;

10 an object access step of accessing an object based upon the access information extracted at said extraction step; and

a display step of presenting a display that corresponds to the object based upon content of the  
15 object accessed at said access step.

72. The method according to claim 71, wherein said display step presents either a thumbnail display or a list display regarding objects accessed at said access step.

20 73. The method according to claim 71, wherein the access information contains enabling information indicating whether it is permissible to access another object present at a storage location to which said object belongs;

25 said access step accesses another object present at said storage location in a case where the enabling



information permits access to the other object; and

said display step presents an at-a-glance display relating to an object present at said storage location based upon results of accessing performed at said access  
5 step.

74. The method according to claim 73, further comprising:

a selection step of selecting a desired object from the at-a-glance display; and

10 a content display step of displaying content of an object that has been selected at said selection step.

75. The method according to claim 71, wherein the access information contains enabling information indicating whether it is permissible to access another  
15 version of said object;

said access step accesses an object which is another version of said object in a case where the enabling information permits access to the other version; and

20 said display step presents an at-a-glance display inclusive of the other version of said object based upon results of accessing performed at said access step.

76. The method according to claim 75, further comprising:

25 a selection step of selecting a desired object from the at-a-glance display; and





accessing the object when it is set by said setting means that the unregistered user is not provided with the access information.

87. The method according to claim 41, further  
5 comprising a setting step of setting whether or not to provide the access information to an unregistered user who has not registered as a user, as a part of said access information.

88. The method according to claim 87, further  
10 comprising a step of giving password to the unregistered user when it is set in the setting step that the unregistered user may be provided with the access information.

89. The method according claim 87, further comprising a  
15 step of prohibiting the unregistered user from accessing the object when it is set by said setting means that the unregistered user is not provided with the access information.

90. The method according to claim 61, further  
20 comprising a setting step of setting whether or not to provide the access information to an unregistered user who has not registered as a user, as a part of said

access information.

91. The method according to claim 90, further comprising a step of giving password to the unregistered user when it is set in the setting step that the  
5 unregistered user may be provided with the access information.

92. The method according claim 90, further comprising a step of prohibiting the unregistered user from accessing the object when it is set by said setting means that the  
10 unregistered user is not provided with the access information.

93. A computer-readable memory storing a control program for causing a computer to generate electronic mail, said control program having:

15 code of a designating step of designating a desired object to be attached to electronic mail;

code of an acquisition step of acquiring access information relating to the object designated at said designating step; and

20 code of a generating step of generating electronic mail information which includes the access information acquired at said acquisition step.

94. A computer-readable memory storing a control program for causing a computer to process received mail,

said control program having:

code of an extraction step of extracting access  
information contained in electronic mail that has been  
received;

- 5       code of an access step of accessing an object based  
upon the access information extracted at said extraction  
step; and

- code of a display step of presenting a display that  
corresponds to the object based upon content of the  
10   object accessed at said access step.

## ABSTRACT OF THE DISCLOSURE

When a desired document file to be attached to electronic mail is designated, access information relating to the designated document file, e.g., access  
5 information relating to the location of the document and privilege to access the document, is acquired. The access information is set by a user through a prescribed user interface. An attachment file which includes this  
10 access information is generated and electronic mail to which the generated attachment file has been attached is transmitted. The receiving side acquires and views the corresponding document file in accordance with the attached access information.

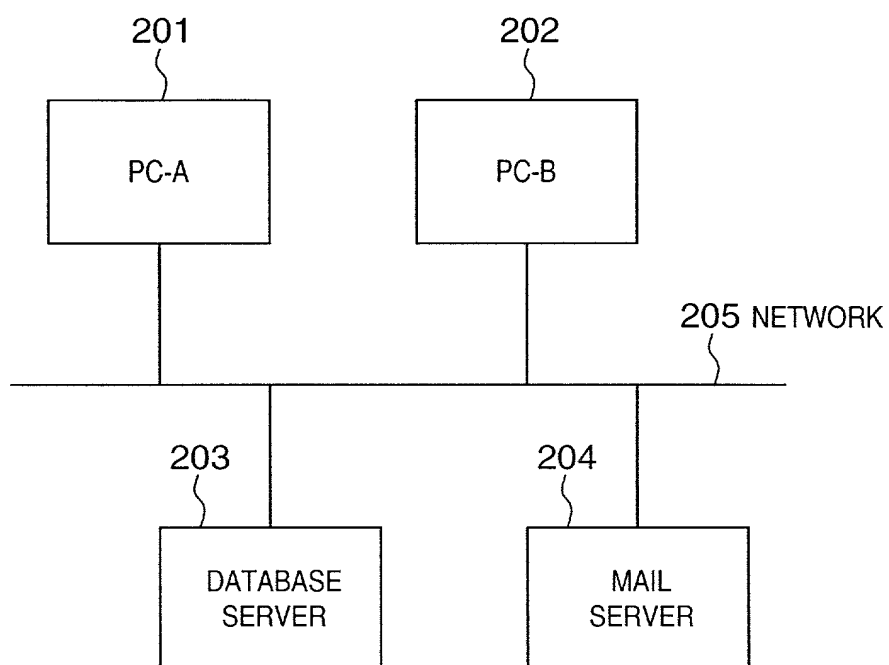
**FIG. 1**





FIG. 3

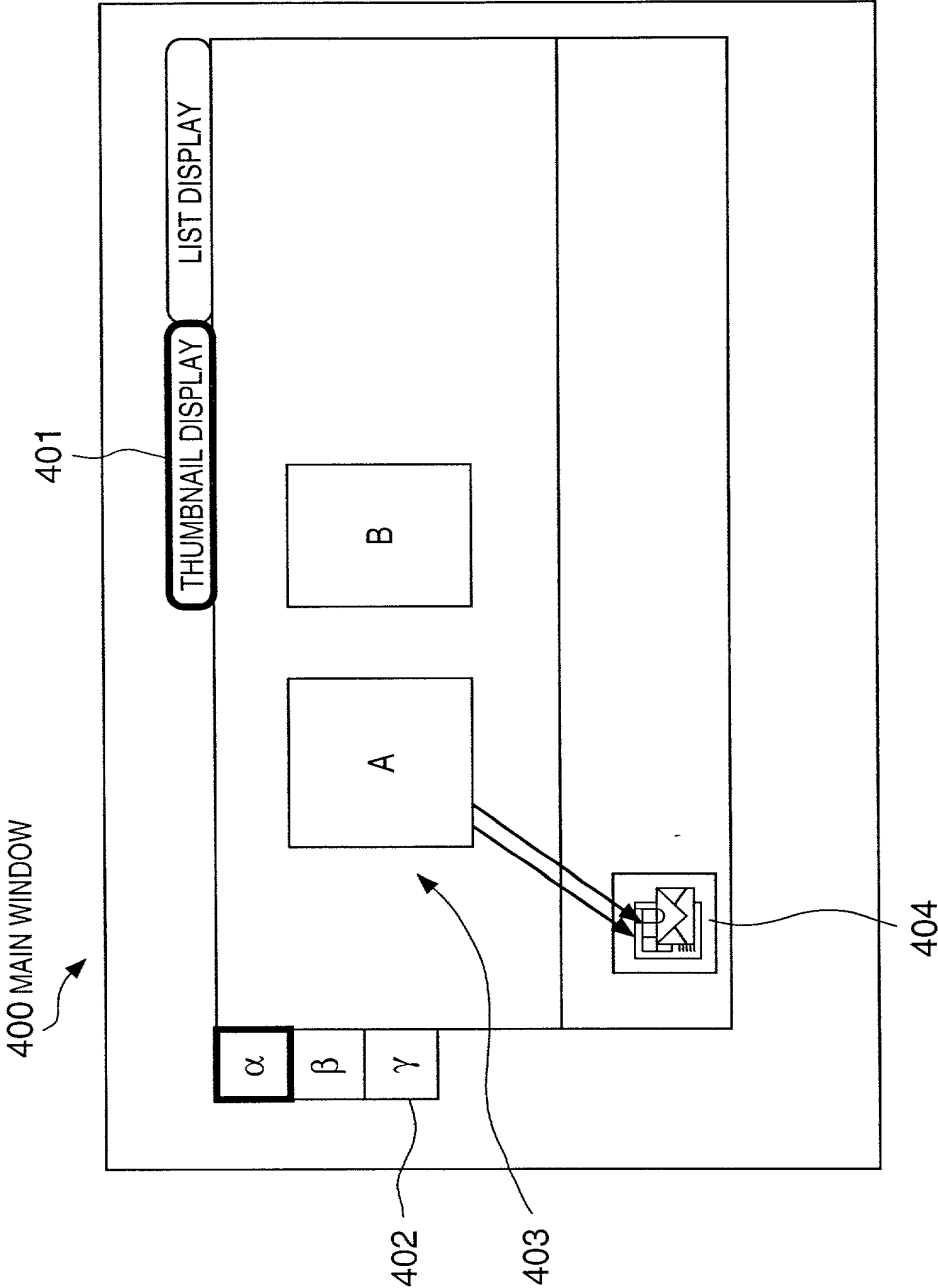
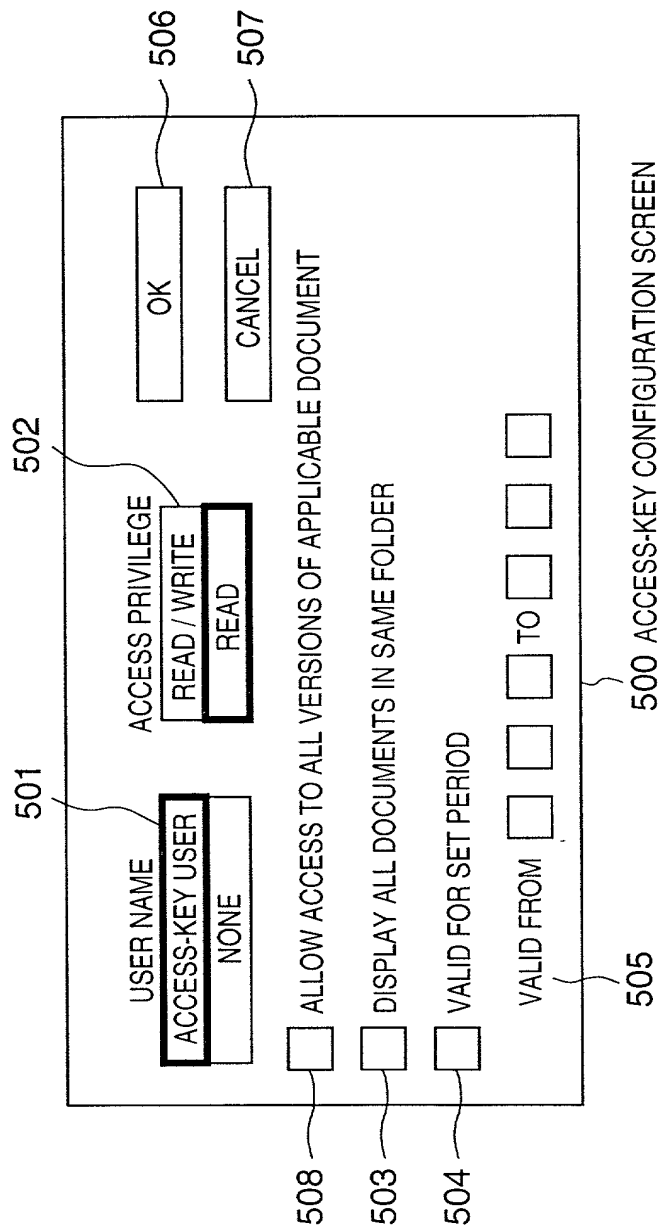


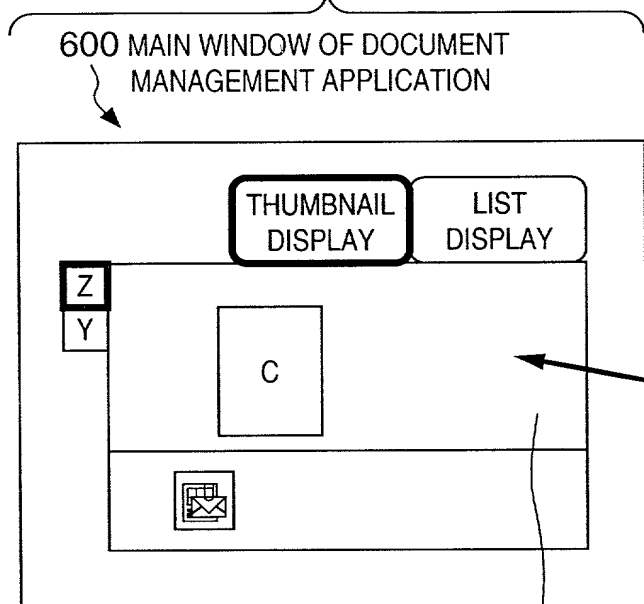
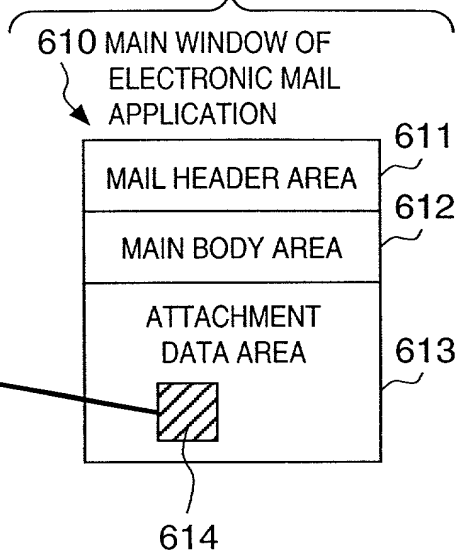
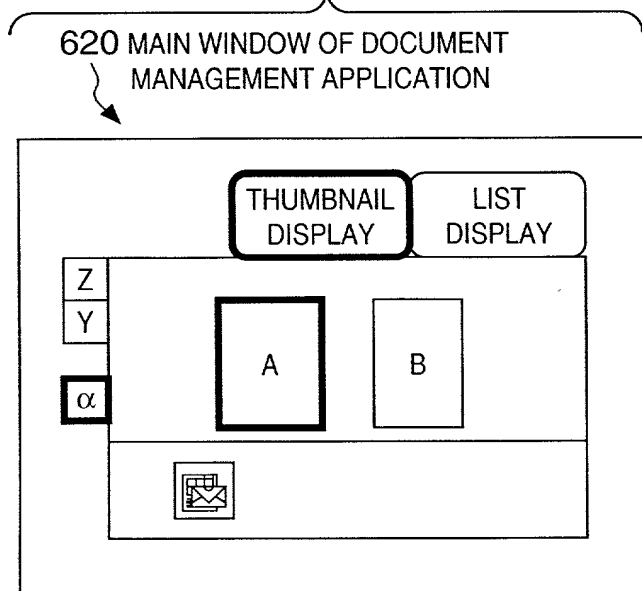
FIG. 4



**FIG. 5**

510 ACCESS-KEY FORMAT PRIOR TO ENCRYPTION

ABSOLUTE STORAGE POSITION TO DOCUMENT
USER NAME
PASSWORD
ACCESS PRIVILEGE
APPLICABLE-DOCUMENT ALL-VERSION ACCESS ENABLE FLAG
SAME-FOLDER ALL-DOCUMENT DISPLAY FLAG
KEY-FILE VALIDITY DATE
ID OF APPLICABLE DOCUMENT
ID OF DOCUMENT 1 IN STORAGE AREA IDENTICAL WITH THAT OF APPLICABLE DOCUMENT
ID OF DOCUMENT 2 IN STORAGE AREA IDENTICAL WITH THAT OF APPLICABLE DOCUMENT
⋮

**FIG. 6A****FIG. 6B****FIG. 6C**

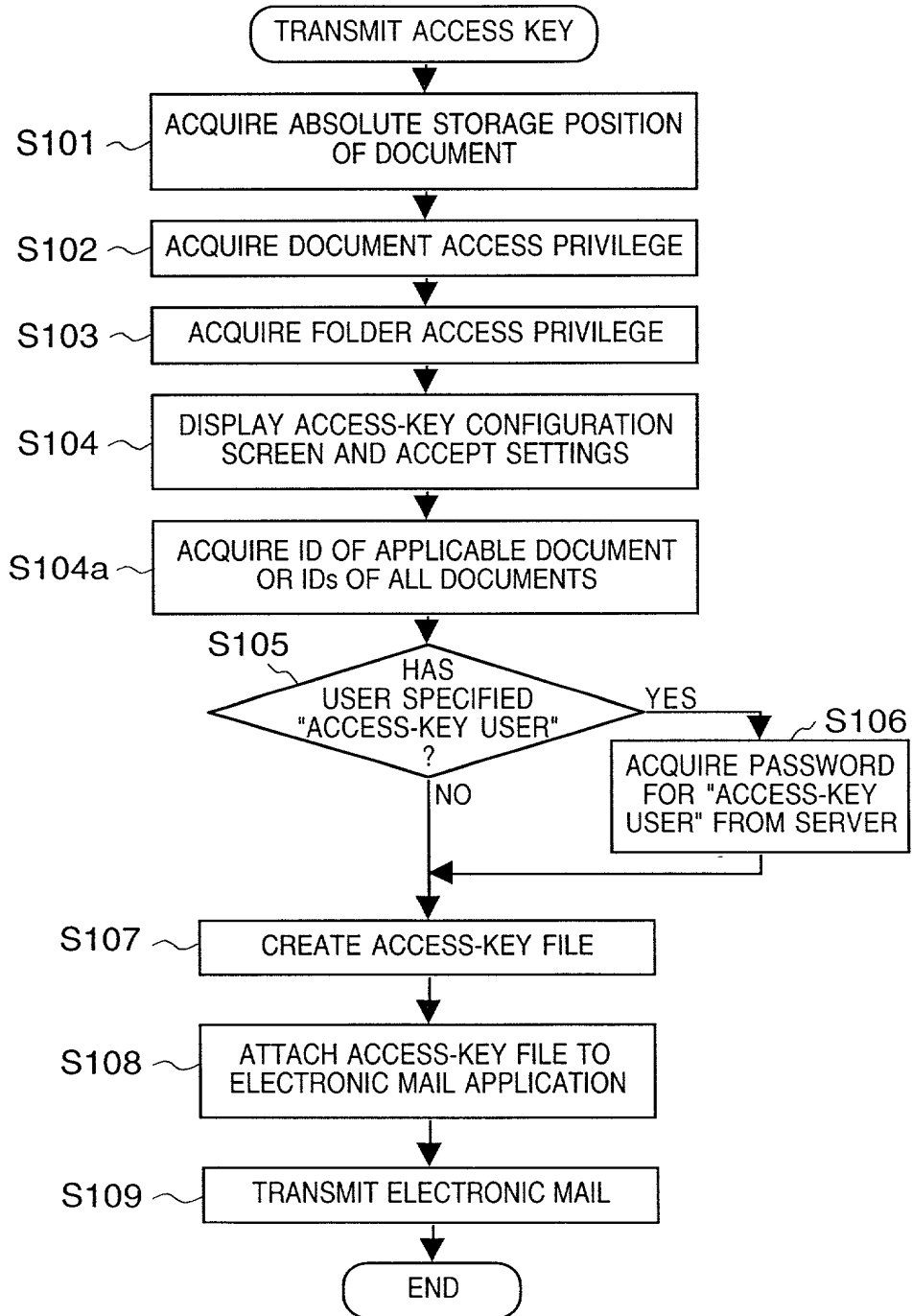
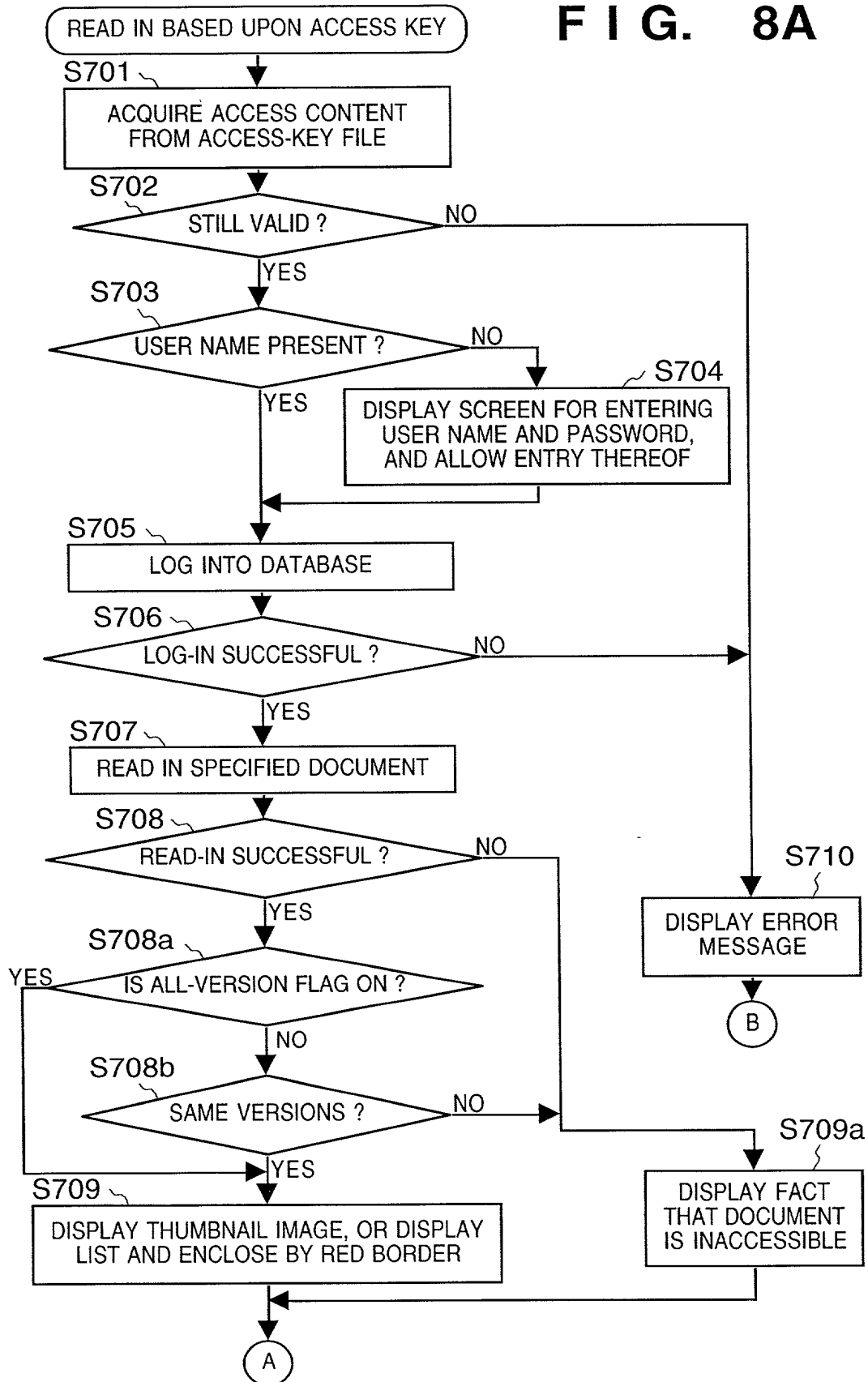
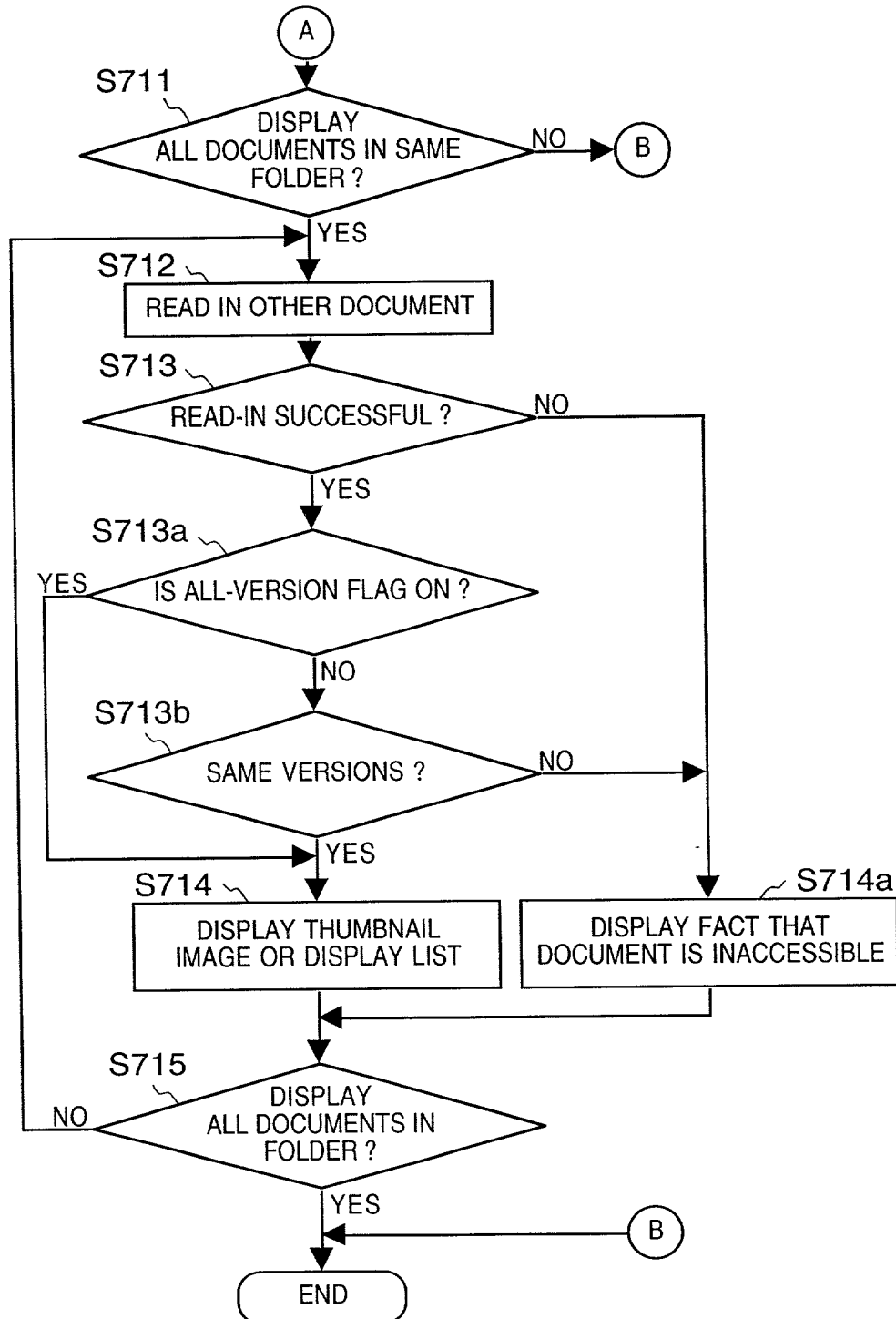
**FIG. 7**

FIG. 8A



## FIG. 8B





COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION

(Page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled \_\_\_\_\_

INFORMATION PROCESSING APPARATUS, SYSTEM AND METHOD

the specification of which ☒ is attached hereto ☐ was filed on \_\_\_\_\_ as United States Application No. or PCT International Application No. \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No.	Filed (Day/Mo./Yr.)	(Yes/No) Priority Claimed
Japan	11-054626	March 2, 1999	Yes
Japan	2000-049691	February 25, 2000	Yes

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)
N/A		

I hereby appoint the practitioners associated with the firm and Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to the address associated with that Customer Number:

**FITZPATRICK, CELLA, HARPER & SCINTO**  
Customer Number: 05514

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon

Full Name of Sole or First Inventor HIROYUKI FUJIYOSHI

Inventor's signature \_\_\_\_\_

Date \_\_\_\_\_ Citizen/Subject of Japan

Residence 1522-42, Hasamacho 3-chome, Funabashi-shi, Chiba-ken, Japan

Post Office Address c/o Canon Kabushiki Kaisha,  
30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo, Japan